

## A Tobacco-Free Service-Learning Pilot Project

Sherry Bassi, EdD, APRN, BC; Janet Cray, APRN, BC; and Lois Caldrello, RN, BS

### ABSTRACT

This pilot project was a collaboration between a public university school of nursing in New England and an elementary school in southeastern Connecticut, with 450 student participants. The school was selected because of the presence of poverty, health disparities, and single-parent homes in the population. Eighteen nursing students participated as part of a service-learning project. The nursing students provided tobacco-use education. Fourth and fifth grade students were taught components of the pro-health tobacco education program, the Tar Wars curriculum. Other age-appropriate strategies targeted grades pre-kindergarten through 3. One hundred percent of fourth and fifth grade students achieved the learning objectives; in addition, 415 of

the students participated in a school-wide poster contest reproducing the learned content. Ninety-five percent of the nursing students earned a grade of A and viewed the project positively. Ten parents enrolled in a smoking cessation program offered on site—20% completed the program and 10% remain tobacco-free.

**T**obacco use, particularly cigarette smoking, is the leading preventable cause of death in the United States and is responsible for approximately 440,000 deaths each year (Centers for Disease Control and Prevention [CDC], 2002). Approximately 80% of tobacco users initiate use before age 18, and if this trend continues, it is estimated that 5 million children age 18 years and younger will die prematurely as adults (CDC, 2002). One of the national health objectives for 2010 is to reduce the prevalence of cigarette smoking among adults to less than 12% tobacco use, particularly cigarette smoking (CDC, 2002).

### State Data

In Connecticut, 13.1% of middle school students use some form of tobacco, compared with the national average of 11% (CDC, 2002). Although overall tobacco use among high school students decreased from 32% to 24% from 2000 to 2005, nearly 15% of middle school students and almost 20% of high school students who never smoked report that they would consider smoking a cigarette sometime during the next year (Connecticut

Department of Public Health, 2005). More than 500,000 adults in Connecticut smoke cigarettes (Connecticut Department of Public Health, 2007). Almost 58,000 middle school and high school students in Connecticut smoke cigarettes (Connecticut Department of Public Health, 2007). More than 21,000 middle school and high school students in Connecticut smoked their first cigarette before the age of 11 (Connecticut Department of Public Health, 2007). Every year in this state, more than 5,400 people die from smoking-related diseases (Connecticut Department of Public Health, 2007). Because schools have the potential to reach most children, effective school-based programs are needed, especially those that help students reject messages that promote cigarette use, to provide students with the motivation and skills to quit smoking or not to start in the first place (CDC, 2002).

### Community Collaboration

Five years ago, the school of nursing participating in this pilot project redesigned their undergraduate curriculum, establishing a goal to include community-based nursing in all aspects of the curriculum. The authors think that one way to achieve that goal is to introduce service-learning into courses and to integrate students into surrounding communities to perform services. The tobacco-free pilot project is a collaborative effort between the school of nursing and a local elementary school in southeastern Connecticut. The intent was to create a service-learning project that demonstrated

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Dr. Bassi is Assistant Professor, University of Connecticut, School of Nursing, Storrs. Ms. Cray is Pediatric Nurse Practitioner, School Based Health Clinic, Eastern Point Elementary School, Groton, and Ms. Caldrello is Staff Nurse, Cardio-Thoracic Intensive Care Unit, Yale-New Haven Hospital, New Haven, Connecticut. At the time this article was written, Ms. Caldrello was a senior undergraduate nursing student.

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Address correspondence to Sherry Bassi, EdD, APRN, BC, Assistant Professor, University of Connecticut, School of Nursing, 231 Glenbrook Road Unit 2026, Storrs, CT 06269-2026; e-mail: Sherry.bassi@uconn.edu.

integral involvement of the community partners to achieve learning and to address community concerns and broad determinants of health (Seifer, 1998). The elementary school, located in a small city with a population of 39,166, was selected as the project site because of the vulnerability of the approximately 450 students in prekindergarten through grade 5—the majority of whom receive free and reduced meals, reside in public housing, and live in single-parent households. The school is open from 6:30 a.m. to 6:00 p.m. daily, offering extensive services, such as a breakfast program, before and after school programs, and a school-based health clinic. Service-learners viewed a glimpse of the merit of mobilizing neighborhood assets to form community partnerships for healthy change (Kraus, Morgan, & Matteson, 2003), a vital function of public and community health nursing.

### Community Health Curriculum Integration

With its revised undergraduate curriculum, undergraduate students are exposed earlier to community assessment skills and delivery of primary, secondary, and tertiary services to individuals, families, and the community. By their junior year, nursing students enrolled in our public health nursing course are required to develop and present a health education project targeting a vulnerable population. Nursing students were offered the opportunity to participate in the tobacco-free project as a service-learning option to fulfill the requirements of the class, representing 25% of their final grade. This service-learning option combined meaningful service in the community with a formal educational curriculum and structured time for service-learners to reflect on their service and educational experience (Gray, Ondaatje, & Zakaras, 1999). Eighteen nursing students participated in the project.

### Multiple Interventions Framework

We adapted the *Multiple Interventions*

for *Community Health* (University of Ottawa, 2003) as a framework to help the service-learners understand the nature of the health education project. Multifaceted community health problems are often complex, requiring multiple strategies for intervention as well as evaluation. Our project strived to include program content that targeted individual behavior change, collective capacity and action, and supportive environments (University of Ottawa, 2003). We noted that a problem with many tobacco prevention programs is late implementation, in middle school (grades 6 through 8) or later. Although this age group is in transition and may be appropriate for drug prevention initiatives, early elementary children are impressionable, responsive, and inclined to believe trusted authority figures such as teachers and nurses (Carver, Reinert, Range, & Campbell, 2000-2001; Rosendahl, Galanti, Gilljam, Bremberg, & Ahlbom, 2002). Studies also support that nursing majors satisfy an educational need to help children learn about the dangers of tobacco (Burchfield, Marengo, Dickens, & Willock, 2000; Miller, Gillespie, Billian, & Davel, 2001). The program we designed reinforced the framework of the *Multiple Interventions for Community Health* (University of Ottawa, 2003) by offering a coordinated program with multiple interventions. The framework also guided us in conceiving four phases of service-learning to allow success for learners in delivering a comprehensive health education program. The phases included a pre-preparation phase, a preparation phase, an intervention phase, and a reflection phase.

### Service-Learning Process

The tobacco-free project provided interventions for the elementary students and their parents. Service-learners were active participants at all intervention levels for all grades.

#### Pre-Preparation Phase

During this phase, service-learners were provided with a reading list to prepare for their assignments and

were expected to perform a literature search. They were required to complete a community needs assessment by performing a windshield survey of the elementary school's neighborhood, analyzing census data and other health indicators, and interviewing key informants. This provided service-learners with an opportunity to appreciate the school's community prior to physically entering the school.

#### Preparation Phase

On completion of their assessments, nursing students toured the elementary school with the nurse practitioner from the school-based health clinic. The nursing students had ample opportunity throughout the project period to meet with various stakeholders to ask questions, clarify school policies and procedures, review the times they were assigned to teach, and reflect on their experience. The school-based nurse practitioner and the course instructor partnered to facilitate pre-intervention and post-intervention conferences to allow the nursing students ample opportunity to process their experiences. Before engaging in classroom teaching, each nursing student was required to submit an individual teaching plan to both their instructor and the classroom teacher. The teaching plan was based on the Tar Wars curriculum (American Academy of Family Physicians, 1998), their readings, and identification of the appropriate *Healthy People 2010* objectives. Tar Wars is an all-inclusive anti-tobacco education program approved for school health promotion by the CDC, targeting students in fourth and fifth grades. Using the Tar Wars curriculum, the nursing students developed learner objectives for their classroom instruction. The teaching plan also identified the appropriate growth and development skills, as well as the abilities and interests, of their target audience.

#### Intervention Phase

Service-learners were ready for a classroom activity that included a 1-hour interactive presentation facilitated by paired service-learners and

an explanation of a poster contest that would serve as a program evaluation tool for all grades. A program objective for fourth and fifth grade students was that 80% of the students would be able to identify three negative effects associated with tobacco use and three positive effects of not using tobacco. For grades 2 and 3, service-learners incorporated a video followed by short discussions reinforcing refusal skills and short-term effects of tobacco use. Grades pre-kindergarten, kindergarten, and first presented more of a challenge. Service-learners developed puppet shows using scripts they composed presenting tobacco refusal skills for the young students or they used storytelling. "Family Night" was a strategy that the school successfully used in the past to bring families and educators together for an evening of social, educational, and community congregation. The evening of our event, 350 participants wore specially designed tobacco-free T-shirts. Service-learners participated in the family intervention by gathering resources and hosting a resource table. As families registered for the event, service-learners distributed and collected a parent survey to determine personal tobacco use and environmental smoke risk.

#### Reflective Phase

An effective method to examine learning is reflection. Reflection can be described as a framework wherein students process and synthesize information from their experiences (Alliance for Service Learning in Education Reform, 1993). Service-learners were mindful of their presence as role models to the younger students. In addition to their classroom instruction about tobacco, they talked about the value of college and their own personal experiences related to tobacco use and college. They opted to eat lunch with the students and blend into the school environment as much as possible. The school principal was thrilled with the visibility of the nursing students and the positive behaviors they modeled, especially their presence at "Family Night." Service-learners reflected on these experiences and

frequently shared their experiences with fellow classmates in the didactic course and group discussions with the school nurse practitioner and one of the authors (S.B.). They frequently processed their reflections together, exchanging observations of the developmental stage behavior the children exhibited that surprised the nursing students. Formally, service-learners were asked to reflect on their total experience by returning to their public health class and simulate some of the interventions they presented. They instructed their peers to assume the developmental stages of the younger students. Their recreation of the lessons was effective in demonstrating

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their experiences. The final requirement of the reflective phase was for service-learners to complete a paper describing the aspect of the project they found most rewarding.

#### Program Evaluation

Evaluation consisted of analysis of elementary students' responses to surveys and a pretest and posttest measuring knowledge level in grades 4 and 5. Younger children were assigned completion of a poster to evaluate learned content. Service-learners

completed a program evaluation and a reflective paper describing their experience. A parent survey was administered to provide data for future program planning.

#### Elementary Student Findings

Ninety-six fourth and fifth grade students received the Tar Wars intervention, including 43 (45%) boys and 53 (55%) girls (median age = 9.92 years). Pretests and posttests were administered to determine the extent to which the children and their families used tobacco and to measure the effectiveness of the curriculum. An important aspect of the classroom program was for service-learners to correct student misperceptions regarding tobacco use. They achieved this with a worksheet students used to estimate their perceptions of tobacco use. Fourth and fifth grade students ( $n = 92$ ) perceived that 19.7% of their own grade level, 41.7% of ninth grade students, and 74.5% of adults used tobacco products. Using their own personal experiences and the interactive curriculum activities, service-learners corrected students' misperceptions and reaffirmed that tobacco users are often in the minority. Less encouraging were the number of students that reported tobacco use in their homes (44%).

The objective of the Tar Wars curriculum was to ensure that at least 80% of the students would succeed in identifying the effects of tobacco. One hundred percent of the students were successful in achieving this objective. They successfully identified the negative effects of tobacco, as well as cited the positive effects of being tobacco-free, such as "you can hit home runs and make touchdowns," "[you have] white teeth," "[you] smell clean," and "[you] have more friends."

Four hundred fifteen students completed a poster for the schoolwide poster contest, successfully reproducing learned content. The benefit of service-learning for the community emerged, as the younger students (kindergarten through grade 2) often depicted the nursing students teaching in the classrooms. During Family Night, a parent survey was collected measuring attitudes about tobacco in

the home and the need for services such as smoking cessation. Sixteen parents registered for a smoking cessation program to be held on site. Of 10 parents who began the program, 2 parents completed the program and 1 parent remains smoke-free. These results may seem discouraging, but they are consistent with current practices in smoking cessation. Prochaska, Velicer, Prochaska, and Johnson (2004) reported that only approximately 8% of the smoking population is prepared to quit within the next month.

#### Service-Learner Evaluations

Service-learners reviewed student posttests of their teaching, which validated their effectiveness in the classroom. Positive outcomes they reported about their own personal learning included that their personal expectations were met by being able to educate children about the negative consequences of smoking, the ability to work with peers, the autonomy to establish their own teaching plan, the fun and educational nature of the program, and a sense of satisfaction that they were effective. They also reported that they felt better prepared to identify the various needs of a community and to educate their patients. Service-learners consistently described an improved appreciation of the role of public health nursing and the value of working collaboratively with those of multiple disciplines, such as the school-based health clinic nurse, teachers, administrators, and local health districts. They recognized the value of the elementary school serving as a core community resource for the surrounding housing project. In addition, they felt that the Multiple Interventions Framework was an excellent model for planning future programs when they enter professional practice. They identified the need to target this susceptible population by using multiple interventions to create a community of tobacco-free support. They described being inspired to teach and sponsor community health promotion in the future. Travel time to the elementary school was the only identified weakness of the experience.

Ninety-five percent of the nursing students who participated in the project earned a grade of A for the entire public health course. The quality of the reflective final papers demonstrated the enthusiasm they possessed for the project. Their work was well supported by appropriate literature reviews familiarizing them with other similar programs. The assignment of a community assessment (windshield survey) strengthened their knowledge of the surrounding community and helped them to better understand the needs of the students and

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their families. This new knowledge strengthened their teaching plans to ensure culturally specific teaching for their assigned students.

#### Conclusions and Future Implications

Service-learning projects like this allow nursing students to not only meet course objectives, but also to observe strategies to empower a community to improve the health of its members (Burchfield et al., 2000). As health care providers, we must speak

out against tobacco use; undergraduate nursing students are invaluable in spreading the message to elementary school children. By doing so early in a child's development, we are addressing the single most preventable cause of death in our society (Miller et al., 2001). Clearly, we need to evaluate long-term outcomes for projects such as this. With additional funding, it would be reasonable to follow this cohort of elementary students as they progress into middle school and high school to observe whether their perceptions, behaviors, and attitudes toward tobacco use changes.

These kinds of projects provide nursing students with the necessary skills to contribute to their communities. It promotes a positive relationship between the university and the communities we serve. Nursing students in this project were able to articulate the appreciation of the value of other disciplines as they address the needs of a community, especially as it relates to tobacco use. They were able to recognize and, in some cases, articulate their own future professional role, especially related to health promotion. They reported a sense of increased confidence working with community members and leaders outside the school of nursing. They also reported the positive benefits of working directly with a faculty member outside the realm of the classroom in a practice setting where the faculty member was well known.

We know that including a service-learning option within academic education helps students relate theory to practice, fosters higher levels of critical thinking, and provides insight into real-life community issues (Mayne & Glascoff, 2002; Poirier, 2001). Despite that numerous studies point to the positive benefits of service-learning, "establishing direct links between service-learning program objectives and outcomes for students has been difficult" (Bradley, 2003, p. 47). This project identified the positive themes that the nursing students identified in their program evaluations about meeting the objectives of the tobacco education program but did not specifically measure in-depth

objectives or long-term outcomes for service-learning, which will be considered in the next phase of the project.

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